## Remarks

Reconsideration of the application in light of the remarks below and allowance of all pending claims are respectfully requested. Claims 1-3, 11-29, 31-51 and 53-62 remain pending. **Applicants respectfully request that the remarks presented herein be carefully considered, since the Final Office Action cited new art.**

In the Office Action, dated May 24, 2004, claims 1, 3-12, 16-19, 21, 23-32, 36-39, 43, 45-54 and 58-61 are rejected under 35 U.S.C. 103(a) as being unpatentable over the paper "Automatic TCP Buffer Tuning" by Mathis et al. in view of Braddy et al. (U.S. Patent No. 6,304,967); claims 2, 20, 22, 40-42, 44 and 62 are rejected under 35 U.S.C. 103(a) as being unpatentable over Mathis in view of Braddy and further in view of Gupta et al. (U.S. Patent No. 6,405,252); and claims 13-14, 33-35 and 55-57 are rejected under 35 U.S.C. 103(a) as being unpatentable over Mathis in view of Braddy and further in view of Eckley et al. (U.S. Patent No. 6,163,797). Applicants respectfully, but most strenuously, traverse these rejections for the reasons below.

In one aspect of applicants' invention, sockets are dynamically optimized for clustered computing environments. To optimize a socket in such an environment, application specific information, such as the number of remote sockets to be opened, as well as information relating to the current configuration of the clustered environment, are utilized to determine the optimal socket tuning needed for efficient internet protocol traffic.

As one example, applicants claim a method of tuning sockets of a clustered computing environment (e.g., independent claim 1). The method includes, for instance, obtaining, by an application of the clustered computing environment, a value indicating a number of remote sockets to be opened; dynamically determining information relating to a current configuration of the clustered computing environment; and setting one or more parameters of a socket of the clustered computing environment based on the dynamically determined information and the obtained value. Thus, in applicants' claimed invention, an application obtains information that is useful in tuning the sockets.

As explicitly stated in the Office Action, Mathis fails to teach or suggest obtaining, by an application of the clustered computing environment, a value indicating a number of remote sockets to be opened. Thus, Braddy, a newly cited reference, is relied upon. However, applicants respectfully submit that the combination of Mathis and Braddy is erroneous.

Mathis teaches that an application has no information useful in tuning buffers. It is explicitly stated in Mathis: "Applications have no information about network congestion or kernel memory availability to make informed calculations of optimal buffer sizes and should not be burdened by lower levels." (Section 1.3, last paragraph, page 316.) Instead, in Mathis, it is the operating system that performs the tuning using information known to the operating system, which does not include the number of remote sockets to be opened. Since it is explicitly taught by Mathis that applications do not have any valuable tuning information and are not to be bothered, Mathis would not be combined or modified by any reference, including Braddy, that describes or suggests obtaining information from an application to be used in tuning sockets.

The teachings of the references and the knowledge of a person of ordinary skill in the art would never lead one to combine the features of Mathis and Braddy. It is well known that if a prior art reference requires some modification in order to meet the claimed invention and such modification destroys the purpose or function of the invention disclosed in the reference, one of ordinary skill in the art would not make the proposed modification. Applicants respectfully submit that if Braddy is combined with Mathis, then the intended function or purpose of Mathis in which applications are not bothered for information is destroyed. Since the combination of Braddy with Mathis completely changes the intent of Mathis, one of ordinary skill in the art would not combine Mathis and Braddy to obtain applicants' claimed invention. When a §103 rejection that is based upon a modification of a reference destroys the intended purpose or function of the invention disclosed in reference, the proposed modification is improper and a *prima facie* case of obviousness cannot be properly made.

Moreover, it is necessary to ascertain whether or not the teachings of the references would appear to be sufficient for one of ordinary skill in the relevant art to make the proposed substitution, combination or modification. Even if all the elements of a claim are disclosed in various prior art references (which is not being conceded herein), the claimed invention taken as

a whole cannot be said to be obvious without some reason given in the prior art why one of ordinary skill would have been prompted to combine the teachings of the references to arrive at the claimed invention. In this case, there is no suggestion made in the references themselves to combine the references as indicated. Further, it is stated in the Office Action that one of ordinary skill in the art would have been motivated to make such a modification in order to evenly distribute client requests among the server computer system as suggested by Braddy. However, applicants respectfully submit that the load balancing described in Braddy is not necessary in applicants' claimed invention, since applicants tune the sockets at the time that a particular application is being initialized. Thus, applicants would not look to the teachings of Braddy to make their invention.

Based on the foregoing, applicants respectfully submit that the combination of Mathis and Braddy is erroneous and applicants respectfully request withdrawal of the rejection based on the combination.

For at least the above reasons, applicants respectfully submit that claim 1, as well as the other independent claims, are patentable over the cited references. Thus, applicants respectfully request an indication of allowability for those claims. Moreover, the dependent claims are patentable for similar reasons as the independent claims, as well as for their own additional features.

For instance, dependent claim 11 recites that the clustered computing environment includes an indeterminate number of sockets. That is, in applicants' claimed invention, the number of sockets is indeterminate; however, an application obtains a value indicating the number of remote sockets. As used herein and in applicants' specification (see, e.g., paragraph 17, page 5; and paragraph 41, page 14), an indeterminate number of sockets means that each time an application is started, the number of sockets can be different. Due to this, applicants devised a technique in which the application determines the number of sockets and this determined information is used to tune the sockets. This is very different from the teachings of Mathis and Braddy, either alone or in combination.

As explicitly stated in the Office Action, Mathis does not teach or suggest obtaining, by an application, a number of remote sockets. Thus, it follows that Mathis does not teach or

suggest obtaining, by an application, a number of remote sockets in an environment having an indeterminate number of sockets.

Further, Mathis even states that static tuning configurations do not account for changes in the number of simultaneous connections. It goes on to state that as more connections are added, more total memory is used, which can ultimately cause the operating system to crash (section 1, paragraph 4). Thus, while Mathis describes an automatic buffer tuning algorithm, Mathis does not describe how to handle an indeterminate number of sockets. As can be seen from the inputs to the tuning algorithm of Mathis, which are listed under section 2.2 on page 317 of Mathis, none of the input variables include an indication of the number of sockets. This is because the number of sockets is fixed at initialization time. Since Mathis does not describe any technique that takes into consideration a varying number of connections, Mathis fails to teach or suggest applicants' claimed invention of tuning sockets in an environment that includes an indeterminate number of sockets.

Moreover, Braddy does not overcome the deficiencies of Mathis. Braddy specifically teaches a static environment in which the number of remote connections is constant. In Braddy, an initialization procedure is performed in which the number of sockets is provided at that time (Col. 9, line 30- Col. 11). Thus, the number of sockets remains constant until another initialization procedure is performed. This is in contrast to applicants' claimed invention in which the number of remote sockets is indeterminate. With applicants' claimed invention, the number can change from invocation of an application to another invocation of an application. It is the application that obtains the value of the number of remote sockets and that value is used in the tuning, as claimed.

Based on the foregoing, applicants respectfully submit that dependant claim 11, as well as other similar dependent claims, are patentable over the combination of Mathis and Braddy.

For all of the above reasons, applicants respectfully request an indication of allowability for all pending claims.

Should the Examiner wish to discuss this case with applicants' attorney, please contact applicants' attorney at the below listed number.

Respectfully submitted,

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